



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

11A

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,116	10/27/2003	Shusaku Okamoto	MAT-8478US	2586

23122 7590 04/13/2007
RATNERPRESTIA
P O BOX 980
VALLEY FORGE, PA 19482-0980

EXAMINER

MCCLLOUD, RENATA D

ART UNIT	PAPER NUMBER
----------	--------------

2837

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/694,116	Applicant(s) OKAMOTO ET AL.	
	Examiner Renata McCloud	Art Unit 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11, 12, 18 and 20-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11, 12, 18 and 20-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/27/03 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to because the boxes in Fig. 1 should be labeled descriptively. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 2837

3. Claims 11,20 are rejected under 35 U.S.C. 102(b) as being anticipated by Graham (US 5200679).

Claims 11, 20: an apparatus/method comprising an object (fig. 5: 71) grasping unit (fig. 1:11; col. 2:63-3:8) an external force detecting section (col. 2: 63-3:8); a determining unit (20 or 80) for determining when the force is equal to or greater than a threshold, (col. 3: 24-41,57-60; col. 7:40-57, col. 8:59-64) if the change in force is due to a first condition which is delivery of the object ((col. 3: 24-41,57-60; col. 7:40-56, 8:9-31, releasing= delivering) or a second condition which is non-delivery of the object (col. 8:33-55, holding the object = non- delivery); a grasp-force control section (44) outputting a grasp-force relaxing signal for releasing the object when the change in force is due to the first condition (col. 7:40-56, 8:9-31, releasing the object delivers the object) and a grasp force strengthening signal for strengthening a grasp force of the object when a change in the external force is due to the second condition (col. 7:58-8:31 holding the object).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 12,21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graham in view of Andeen et al (US4637736) or Hill et al (US 3904234).

Claims 12, 21: Graham teaches the determining unit determines that the change in the external force is due to a request for releasing the grasped object (col. 3: 24-41,57-60; col. 7:53-

Art Unit: 2837

8:31, releasing= delivering) when the change in the external force is equal to or greater than the predetermined threshold (col. 3: 24-41,57-60; col. 7:40-57, col. 8:59-64), releases the grasped object when the change in the external force is determined to be due to the request for releasing the grasped object (col. 7:65-8:31). Graham does not teach determining, after releasing the grasped object, that the change in the external force is due to 1) the first condition which is the delivery of the grasped object when a dynamic frictional force in a gravity direction caused by a downward movement of the grasped object is not detected or 2) the second condition which is the non-delivery of the grasped object when the dynamic frictional force in the gravity direction caused by the downward movement of the grasped object is detected.

Andeen et al teach determining, after releasing the grasped object, that the change in the external force is due to a the first condition which is the delivery of the grasped object when a dynamic frictional force in a gravity direction caused by a downward movement of the grasped object is not detected or 2) the second condition which is the non-delivery of the grasped object when the dynamic frictional force in the gravity direction caused by the downward movement of the grasped object is detected (col. 5:3-23, fig. 4:112, determining slippage) .

Hill et al teach determining, after releasing the grasped object, that the change in the external force is due to a the first condition which is the delivery of the grasped object when a dynamic frictional force in a gravity direction caused by a downward movement of the grasped object is not detected or 2) the second condition which is the non-delivery of the grasped object when the dynamic frictional force in the gravity direction caused by the downward movement of the grasped object is detected (col. 2:29-45, determining slippage). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Graham to determine a slip taught by Andeen et al or Hill et al, in order to prevent slippage of the grasped object.

6. Claims 18 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graham in view of Chao et al (US 5847529) or Hollbrooks (US 6692049)

Claims 18,22: Graham teaches the limitations of claims 11 and 20. Referring to claims 18 and 22, Graham does not teach attention is called to an outside when the grasp force signal for releasing the object is outputted. Chao et al teach in a case of releasing the grasping force, an alarm is issued to an operator/outside (col. 1:20-28). Hollbrooks teaches in a case of releasing the grasping force, an alarm is issued for inspection/outside (col.11: 37-60). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Graham to strengthen the grip as taught by Chao et al or Hollbrooks, in order to indicate that the manipulator is in need of repair.

Response to Arguments

7. Applicant's arguments filed 01/11/07 have been fully considered but they are not persuasive. In response to applicant's argument that Graham does not teach "determining a change in an external force acting on an object grasped with a grasp force, Graham teaches sensing the compressive force applied to an object (71) being grasped (col. 7:53-57) and determining when the amount of compressive force exceeds/reaches a level (a change in compressive force; col. 3:24-41, 3:57-66). Thee compressive force on the object (71) is from the robotic hand is therefore a force external to the object. There is nothing in applicant's claim language that precludes the examiner from reading Graham as meeting the claimed limitations.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renata McCloud whose telephone number is (571) 272-2069. The examiner can normally be reached on Mon.- Fri. from 5:30 am - 2pm.

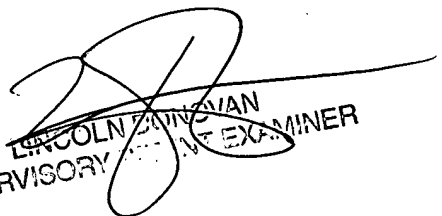
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on (571) 272-2800 ext. 37. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2837

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Renata McCloud
Examiner
Art Unit 2837

rdm


LINCOLN PARK
SUPERVISORY EXAMINER